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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,686

02/19/2004

Maged E. Beshai

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EXAMINER

NGO, NGUYEN HOANG

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

05/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/780,686	Applicant(s) BESHAI, MAGED E.	
	Examiner NGUYEN NGO	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 17-25 in the reply filed on 3/14/2008 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher et al. (US 6307852), in view of Takatori et al. (US 5475676), hereinafter referred to as Fisher and Takatori.

Regarding claim 17, Fisher discloses a polyphase circulating switch (rotator switch, abstract and figure 1) comprising:

a plurality of switch modules each having a module controller (each source node (switch modules) shown as 11 comprises means for allocating (module controller, source tandem transfer controller 20 as seen from figure 1) an incoming data unit to the queue corresponding to the destination of the data unit, col6 lines 14-25);

a first plurality of rotators (rotator plane 130 of figure 5, col10 lines 15-31) each of said clockwise rotators having a respective phase reference (the rotator switch has a fixed component of delay between a particular source-destination pair dependent on the number of phases of rotation, col6 lines 39-45 and col10 lines 49-58); and

a second plurality of rotators (second rotator plane 132 of figure 5, col10 lines 15-31) each of said rotators having a respective phase reference (the rotator switch has a fixed component of delay between a particular source-destination pair dependent on the number of phases of rotation, col6 lines 39-45 and col10 lines 49-58);

wherein each of said switch modules is communicatively connected to at least one of said first rotators and to at least one of said second rotators (as seen from figure 5).

Fisher is however silent to disclose that the first plurality of rotators be clockwise and the second plurality of rotators be counterclockwise. Fisher however discloses the use of two rotator planes for fault tolerance in which if there is an event of failure of a single plane, data may still be transfer with use of the other rotator plane (data path redundancy, col13 lines 55-67 and abstract) and further discloses of the transfer of data from source to destination with a certain delay dependent on the number of phases of

rotation (col6 lines 39-45). Takatori further discloses of the well known concept of having protection lines between nodes of a system in which one line is a clockwise working line and another line is a counterclockwise protection line (col1 line60-col2 line15). It would have thus been obvious to a person skilled in the art to incorporate the well known concept of having a working line (first rotator plane) be in a clockwise fashion and a protection line (second rotation plane for redundancy) be in a counter clockwise fashion as disclosed by Takatori into the rotator switch data path structures of Fisher to in order to efficiently transfer data from a source to a destination in a timely (little delay) manner without loss of data.

Regarding claim 18, the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 17 wherein each of said clockwise rotators is operable to connect each of said switch modules to each other of said switch modules during a rotation cycle, where said rotation cycle includes a plurality of rotation phases, and each of said counterclockwise rotators is operable to connect each of said switch modules to each other of said switch modules during said rotation cycle (col1 lines 21-26 and col1 lines 35-55 and col7 lines 40-50 and as seen from figure 5 and 6).

Regarding claim 19, the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 17 further comprising:

a plurality of module controllers, each module controller of said plurality of module controllers associated with a switch module of said plurality of switch modules (source transfer controller 29 of figure 1 seen in each source); and

a master controller operable to (global priority scheduler, abstract and col8 lines 9-15 and col12 lines 35-40 col12 lines 55-67) and :

determine a schedule for data exchange among the switch modules (source base scheduling, col12 lines 6-15); and

transmit said schedule to said each module controller (scheduling incorporating priority, col12 lines 1-10 and figure 8)

.
Regarding claim 20, the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 19 wherein the master controller is further operable to receive a connection request and select one of said clockwise rotators and one of said counterclockwise rotators for routing the requested connection (requests conveyed to scheduler to schedule data through the rotators planes, col5 line 10-15 and col13 lines 9-15 and figure 8).

Regarding claim 21, the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 19 wherein the master controller is further operable to determine a switching delay from each of said switch modules to

each other of said switch modules through each of said clockwise rotators and through each of said counterclockwise rotators (latency of information transfer, col12 lines 35-50).

Regarding claim 22, 24 the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 17 wherein at least one of said clockwise/counterclockwise rotators is programmable to set its phase reference (s phases per rotation, col2 lines 1-10)

Regarding claim 23, 25, the combination of Fisher and Takatori, more specifically Fisher discloses the polyphase circulating switch of claim 22 wherein the phase references of said plurality of clockwise/counterclockwise rotators are evenly spread over said rotation cycle ($s=d=t$ phases, col1 lines 35-67).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Proctor et al. (US 5703879), ATM Switching Arrangement.

Art Unit: 2616

7. Beshai et al. (US 5168492), Rotating-Access ATM-STM Packet Switch.
8. Beshai et al. (US 5745486), High Capacity ATM Switch.
9. Beshai et al. (US 6339488), Large Scale Communications Network Having A Fully Meshed Optical Core Transport Network.
10. Aweta et al. (US 6788697), Buffer Management Scheme Employing Dynamic Thresholds.
11. Munter et al. (US 20030053417), Rotator Communication Switch Having Redundant Elements.
12. Beshai (US 6876649), High-Capacity WDM-TDM Packet Switch.
13. Langevin et al. (US 2003/0081548), Scheduling Method For Input Buffer Switch Architecture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN NGO whose telephone number is (571)272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nguyen Ngo

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/N. N./

Examiner, Art Unit 2616

/FIRMIN BACKER/

Supervisory Patent Examiner, Art Unit 2616